FYI

DHEC's Bureau of Water

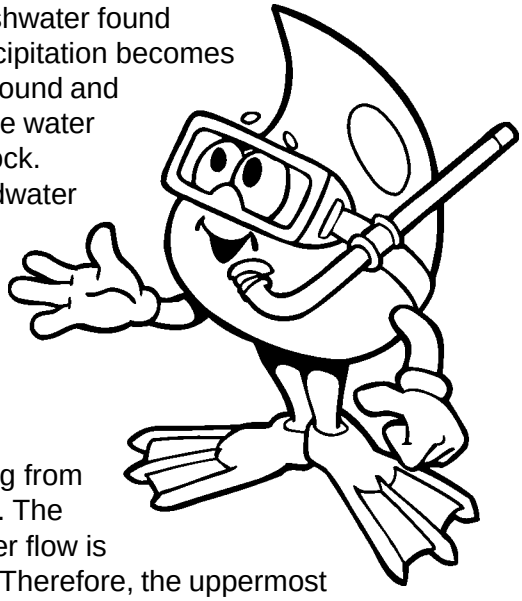
For Your Information...

The Facts About Groundwater

Potential Sources of Groundwater Contamination:

- Underground Storage Tanks
- Landfills
- Septic Tank Systems
- Industrial Wastes
- Improperly Constructed Water Wells
- Household Hazardous Wastes
- Agricultural Chemicals and Wastes
- Over Pumping of Aquifers

The availability and purity of groundwater are taken for granted by most of us. There are countless dangers to groundwater since many of our activities on land can affect the groundwater below.



Groundwater is the supply of freshwater found beneath the earth's surface. Precipitation becomes groundwater after falling to the ground and seeping into aquifers. Aquifers are water filled layers of sand or cracked rock. Contrary to popular belief, groundwater rarely forms underground streams. Groundwater is naturally pure and usually remains undisturbed for years, even centuries or thousands of years, before it is used.

Groundwater flows slowly, moving from a few feet up to 300 feet per year. The direction of a shallow groundwater flow is largely controlled by topography. Therefore, the uppermost groundwater flows from high areas, such as ridge tops, to low areas such as valleys. It can return to the surface through springs, seeps, streams and lakes where the elevation of the land surface is lower than the water table.

Groundwater as a Drinking Water Source

Groundwater provides about 97 percent of the world's total supply of drinkable water. More than 50 percent of South Carolina residents rely on groundwater as their source of drinking water either through public utilities or individual residential wells. Industrial processes, including pulp, paper and textile manufacturing, food processing and metal finishing, also use large amounts of groundwater.

Groundwater is one of our most valuable natural resources. Clean, plentiful groundwater is a key to our health and way of life. But pollution from the land's surface puts some groundwater at considerable risk of contamination.

Groundwater Is a Fragile Resource

The availability and purity of groundwater are taken for granted by most of us. The dangers to groundwater, however, are countless since many of our activities on land affect the groundwater below.

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Contaminants on the ground's surface may damage groundwater quality. Contaminants are generally dissolved and carried by infiltrating rain water into unsaturated soil above the water table. From there, contaminants can enter into the saturated zone and begin to migrate in the direction of groundwater flow.

Since groundwater advances so slowly, pollutants that get into it are not quickly diluted or flushed out. Also, it is difficult to detect groundwater pollution until it reaches a well, basement, underground utility or surface water area. By this time, pollution can be widespread. In addition, once groundwater becomes polluted, it is extremely difficult and expensive to clean up, even partially.

Prevention of Groundwater Contamination

The protection and maintenance of groundwater quality in South Carolina depends upon everyone's efforts to properly manage and dispose of wastes. Initially, we need to identify what hazardous waste products we have on the job and at home. These include many common materials such as: motor oil and gasoline, solvents, oil-based paint, paint thinner, polishes and waxes, cleaning chemicals, some septic tank cleaners, medicine, fertilizer and pesticides.

Hazardous waste must be disposed of properly. Take waste products to a hazardous waste collection site where available. Recycle whenever possible to minimize the impact on solid-waste disposal sites. If you have questions concerning proper disposal, contact your local Environmental Quality Control Office.

What else can I do?

Keep your septic system well maintained. Have the system checked each year by a competent professional. Be sure the tank is pumped every three to five years. Avoid using the toilet or sink for disposal of solid items and chemicals.

In some areas, encroachment of salt water is a problem due to heavy pumping of wells. Conserve water. Attach water-saving devices to your shower heads, toilets and other appliances. Fix leaky faucets. Avoid letting the water run when doing the dishes or brushing teeth. Run full loads in the dishwasher and washing machine.

For further information about groundwater at landfills or hazardous waste sites, contact DHEC's Bureau of Land and Waste Management, Division of Hydrogeology at **(803) 896-4010**.

If you have other questions about groundwater, contact DHEC's Bureau of Water, Division of Water Monitoring, Assessment and Protection at **(803) 898-4300**.

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DHEC's Bureau of Water FYIs provide general information on environmental topics. Readers are encouraged to reproduce this material. For more information about water protection and conservation issues, please call **(803) 898-4300** or visit our Web site at **www.scdhec.net/water**. Please send written correspondence to: DHEC's Bureau of Water, 2600 Bull Street, Columbia, SC 29201.

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